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LyondellBasell Industries			COVINGTON, RAYMOND K	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/770,924

Filing Date: February 03, 2004

Appellant(s): GREY ET AL.

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Kevin M. Carroll  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed March 13, 2006 appealing from the Office action mailed October 19, 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,307,073

JP 4-352771

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones US 6,307,073 in view of JP 4-352771.

*Determination of the scope and content of the prior art (MPEP §2141.01)*

Jones teaches a direct epoxidation process using a catalyst mixture wherein one catalyst is a palladium free titanium catalyst and the other catalyst includes but

is not limited to, for example titanium and gold. See, for example, column 2 lines 8-10, 19, 35-37 and 48-51.

*Ascertainment of the difference between the prior art and the claims (MPEP 2141.02)*

Jones differs from the claimed invention in that it does not explicitly include a palladium component.

*Finding of prima facie obviousness—rational and motivation (MPEP 2142-2413)*

However, Jones does disclose that is well known to use palladium as a catalyst component in epoxidation processes in order to promote the in-situ formation of the oxidizing agent. See column 1 lines 41-46.

Further, JP 4-352771 teaches an analogous process which employs a titanium palladium catalyst. In view of the art as a whole it would have been obvious to one on ordinary skill in the art to combine the teaches of Jones and JP 4-352771 in order to obtain their cumulative effects.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grey et al US 6,498,259 in view of Bowan et al WO 98/00413.

*Determination of the scope and content of the prior art (MPEP 2141.01)*

Grey et al teaches a direct epoxidation process using a catalyst mixture containing titanium, for example TS-1, and a noble metal catalyst, for example palladium and/or gold, in the same type manner as recited in the claims. See, for example, column 2 lines 14-47, 65-67, column 3 lines 41-48, column 4 lines 32-55,

column 7 lines 30-42, example 3, lines 60-70, column 8 example 5 and lines 47-70, comparative example 7, particularly lines 62-63.

**Ascertainment of the difference between the prior art and the claims (MPEP 32141.02)**

While Grey et al discloses a catalyst mixture using titanium without palladium, e.g. example 5, as well as a catalyst mixture with titanium containing palladium, it may be argued that a palladium free titanium catalyst is not disclosed.

**Finding of prima facie obviousness--rational and motivation (MPEP 32142-2413)**

However, Bowan et al discloses that titanium catalyst compositions falling within the scope of Grey et al are considered palladium free when the amount of palladium is less than 0.01% in analogous process. See page 11 lines 8-12.

In view of the art as a whole it would have been obvious to one on ordinary skill in the art to modify the process of Grey et al to incorporate the teachings of Bowan et al in order to obtain the cumulative effects of the mixed catalyst system.

**(10) Response to Argument**

Appellants' comments have been noted and considered but are not deemed persuasive of patentability. Catalysts mixtures containing both palladium-free titanium zeolite and palladium-containing titanium zeolite are known in the art.

The recited claims require palladium, titanium zeolite and in some instances, gold, a solvent and/or a buffer in the catalyst mixture. The cited prior art teach this catalyst mixture to be obvious.

It would have been obvious to one of ordinary skill in the art to modify the process of Jones to incorporate the teachings of JP 4-352771 et al in order to obtain the cumulative effects of the catalyst mixture.

The idea of combining somewhat different but otherwise analogous catalyst components flows logically from their having been individually taught in related processes producing the same epoxide products in prior art. *In re Kerkhoven* , 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

With respect to Grey et al US 6,498,259 in view of Bowan et al WO 98/00413 Appellants' comments have also been noted and considered but are not deemed persuasive of patentability. Both palladium-free titanium zeolite and palladium-containing titanium zeolite catalysts are known in the art. It would have been obvious to one of ordinary skill in the art to modify the process of Grey et al to incorporate the teachings of Bowan et al in order to obtain the cumulative effects of the mixed catalyst system as the result, an epoxidation product, would not have been unexpected.

The idea of combining somewhat different but otherwise analogous catalyst components flows logically from their having been individually taught in related processes producing the same epoxide products in prior art. *In re Kerkhoven* , 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Raymond Covington

/Raymond Covington/

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